CLASSIFICATION CANCELLED
DATE 12-15-54
For The Atomic Energy Commission
for the
Chief, Declassification Branch

1576

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May 10, 1948

OAK RIDGE NATIONAL LABORATORY
CENTRAL FILES NUMBER
48-5-290

To: J. C. Hart

From: W. D. Cottrell

Subject: Waste Monitoring Weekly Report for Week Ending May 8, 1948.

AIR ACTIVITY MONITORING AND STUDY

General

The percentage data loss for the week ending May 8, 1948 is higher than the average for last month. The data loss on the three outdoor constant air monitors was 28.5% as compared to 17.8% for the month of April. Wind data loss showed a decrease from 25.6% for the month of April to 1.2% for the week ending May 8. The majority of this lost data seems to be due to improper functioning of instruments and could probably be eliminated by more efficient servicing of the instruments in question.

Air Contamination Instances

In two instances the air activity rose above 10% of the tolerance value of 8.5×10^{-8} μc/cc for I^{131}. Both instances occurred during periods of low wind velocity and ther[redacted] inversion.

Meteorological Data

Number of inversions	6
Inches of Rainfall	0.95

Wind direction frequency percentages and average directional hourly velocities are as tabulated on the following page.

[redacted]

This document has been approved for release to the public by:

David R Hamrin 5/11/95
Technical Information Officer, ORNL Site — Date

RELEASE APPROVED
BY PATENT BRANCH
4-15-59 — DATE — SIGNATURE

The agreement between the gamma determinations made at the laundry for this week was only fair. In one case out of ten, or 10% of the time, the net count on the small vessel was larger than the net count on the large vessel.

Discharge activity averages and pertinent data are tabulated below.

	Week Ending May 8	Week Ending May 1	Week Ending April 24
Settling Basin	0.274 mr/hr	0.145 mr/hr	0.194 mr/hr
White Oak Dam	0.006 mr/hr	0.005 mr/hr	0.008 mr/hr
Rainfall	0.95 inches	0.00 inches	0.00 inches
Curies Discharged	22.8 total	15.1 total	18.4 total

W. D. Cottrell
W. D. Cottrell
Waste Disposal Survey

WDC:ca

CLASSIFICATION CANCELLED
DATE 12-15-84
For The Atomic Energy Commission
H. T. [illegible] for the
Chief, Declassification Branch

[redacted]

C.7.

1. J. C. Hart
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6. E. J. Witkowski
7. W. D. Cottrell
8. R. G. Lawler
9. H. J. McAlduff
10. L. R. Setter
11. O. R. Placak
12. C. File
13. C. File
14. R. File

May 25, 1948

OAK RIDGE NATIONAL LABORATORY
CENTRAL FILES NUMBER
48-6-44

To: J. C. Hart

From: W. D. Cottrell

Subject: Waste Monitoring Weekly Report for Week Ending May 22, 1948

AIR ACTIVITY MONITORING AND STUDY

General

The percentage data loss on the three outdoor constant air monitors was 7.7% for the week ending May 22, 1946. There was no wind data loss for this week. The individual data loss on the air monitors for this period was 14.3% on 735-B, 8.9% on 115-B, and 0.0% on 706-A.

Air Contamination Instances

In four instances the air activity rose above 10% of the tolerance value of 8.5×10^{-8} μc/cc for I^{131}. These instances occurred during periods of thermal inversion and low wind velocity. The duration of the periods of activity was approximately 1 hour and occurred at times which would give a possible exposure to the minimum number of personnel.

Meteorological Data

Number of Inversions	7
Inches of Rainfall	None
Prevailing Wind Direction	East
Average Wind Velocity	6.5 mi/hr

Wind direction frequency percentages and average directional velocities are tabulated on the following page.

[redacted]

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David R Hamlin 5/11/95
Technical Information Officer
ORNL Date

Direction	Frequency	Velocity
North	6.5%	7.7 mi/hr
Northeast	0.0%	---
East	40.5%	6.6 mi/hr
Southeast	0.6%	1.0 mi/hr
South	3.0%	7.6 mi/hr
Southwest	16.7%	6.7 mi/hr
West	32.7%	6.5 mi/hr
Northwest	0.0%	---

LIQUID WASTE DISPOSAL MONITORING AND RESEARCH

Routine Monitoring Results

Immersion gamma counts of 5 daily samples each of Dam and Settling Basin Water indicate an activity reduction factor of 10.3 as compared to a factor of 18.9 which is indicated by the beta counts on the same number of Dam and Settling Basin Water samples.

Attached is a tabulation of the gamma radiation values together with the approximate amounts of radiation which would be received from beta emitters in the effluents on the same days surveyed. These gamma values represent radiation intensities on the basis of immersion in infinite volume assuming an average gamma ray energy of 0.7 Mev. The beta values are calculated according to the methods set forth in CR-2565, "Operation Equations and Procedures Involved in Water Counting at Site X", by K. Z. Morgan, assuming an average beta ray energy of 0.3 Mev.

The agreement between the gamma determinations made at the laundry for this week was very good. In no case reported was the net count on the small vessel larger than that on the large vessel. These determinations were made by the single vessel method using a large and a small vessel.

Discharge activity averages and pertinent data are tabulated below.

	Week Ending May 22	Week Ending May 15	Week Ending May 8
Settling Basin	0.310 mr/hr	0.460 mr/hr	0.274 mr/hr
White Oak Dam	0.030 mr/hr	0.012 mr/hr	0.006 mr/hr
Rainfall	None	None	0.95 inches
Curies Discharged	13.1 total	30.8 total	22.8 total

General

Twenty-three cores of mud were collected from the uper lake this week and from these a total of 31 samples were prepared and assayed for activity.

Constant sampling at the Settling Basin has been delayed due to maintenance work on the Basin which prevents the sampler from being installed.

W. D. Cottrell
Waste Disposal Survey

WDC:cs

[redacted]

Date	Settling Basin β mrep/hr* 206 - 11 A.M. Analyses	Settling Basin β mrep/hr* Waste Mon. Analyses	Settling Basin γ mr/hr** Aver. Small & Large	White Oak Dam β mrep/hr* Waste Mon. Analyses	White Oak Dam γ mr/hr** Aver. Small and Large
5-17-48	0.824	0.826	0.360	0.042	0.100
5-18-48	0.661	0.615	0.254	0.035	0.007
5-19-48	0.669	0.795	0.347	0.036	0.020
5-20-48	0.506	0.786	0.321	0.036	0.005
5-21-48	0.602	0.588	0.266	0.039	0.018
Average	0.652	0.720	0.310	0.038	0.030

* mrep/hr = 2.8×10^{-3} N (N = c/m/ml)

** mr/hr = 6.2×10^{-4} S/3 (S = c/m small cylinder)

** mr/hr = 4.1×10^{-4} L/3 (L = c/m large cylinder)

[redacted]

CLASSIFICATION CANCELLED
DATE 12-15-54
For The Atomic Energy Commission
Chief, Declassification Branch

1. J. C. Hart
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May 17, 1948

OAK RIDGE NATIONAL LABORATORY
CENTRAL FILES NUMBER
48-6-45

To: J. C. Hart

From: W. D. Cottrell

Subject: Waste Monitoring Weekly Report for Week Ending May 15, 1948

General

The percentage data loss for the week ending May 15, 1948 was 11.9% on the three outdoor constant air monitors and 0.0% on the wind direction and velocity recording instrument. These figures compare with 20.8% on the air monitors and 1.2% wind data loss for the previous week.

Air Contamination Instances

In two instances the air activity rose above 10% of the tolerance value of 8.5×10^{-8} μc/cc for I^{131}. Both instances occurred during periods of low wind velocity and thermal inversion. The level of air contamination rose to 82.4% of tolerance on May 11, 1948. The duration of this period of activity was approximately 1 hour and the contamination occurred at a time which would give a possible exposure to the minimum number of personnel. A decay curve, on this activity, the results of which will be given in next week's report, is being prepared by the Health Physics counting room.

Meteorological Data

Number of Inversions	7
Inches of Rainfall	None
Prevailing Wind Direction	S.W.
Average Wind Velocity	4.9 mi/hr

[redacted]

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David R Hamm 5/11/95
Technical Information Officer ORNL Site — Date

Wind direction frequency percentages and average directional hourly velocities are:

Direction	Frequency	Velocity
North	2.9%	2.2 mi/hr
Northeast	0.0%	---
East	19.1%	2.7 mi/hr
Southeast	6.5%	7.2 mi/hr
South	10.0%	3.1 mi/hr
Southwest	36.3%	5.7 mi/hr
West	25.0%	5.6 mi/hr
Northwest	0.0%	---

LIQUID WASTE DISPOSAL MONITORING AND RESEARCH

Routine Monitoring Results

Immersion gamma counts of 5 daily samples each of Dam and Settling Basin Water indicate an activity reduction factor of 38.5.

Tabulated below are the gamma radiation values together with the approximate amounts of radiation which would be received from beta emitters in the effluents on the same days surveyed.

	Settling Basin		
Date	mrep/hr* 206 Analyses	mrep/hr* Waste Monitoring Analyses	mr/hr** Aver. Small & Large
5-10	1.38	1.50	0.565
5-11	1.08	1.08	0.352
5-12	0.88	1.05	0.397
5-13	1.59	1.30	0.442
5-14	1.05	1.27	0.642
Aver.	1.19	1.24	0.460

White Oak Dam		
	mrep/hr* Waste Monitoring Analyses	mr/hr** Aver. Small & Large
	0.015	0.013
	0.036	0.007
	0.028	0.006
	0.040	0.016
	0.034	0.017
	0.031 Aver.	0.012 Aver.

*mrep/hr = 2.8×10^{-3} N (N = c/m/ml)
** mr/hr = $6.2 \times 10^{-4} \times S/3$ (S = c/m small cylinder)
** mr/hr = $4.1 \times 10^{-4} \times L/3$ (L = c/m large cylinder)

The above gamma values represent radiation intensities on the basis of immersion in infinite volume assuming an average gamma ray energy of 0.7 Mev.

The beta values are calculated according to the methods set forth in CH-2565, "Operating Equations and Procedures involved in Water Counting at Site "X", by K. Z. Morgan, assuming an average beta ray energy of 0.3 Mev.

The agreement between the gamma determinations made at the laundry for this week was very poor. In 4 cases out of 10, or 40% of the time, the net count on the small vessel was larger than the net count on the large vessel. These determinations were made by the single vessel method using a large and a small vessel.

Discharge activity averages and pertinent data are tabulated below.

	Week Ending May 15	Week Ending May 8	Week Ending May 1
Settling Basin	0.460 mr/hr	0.274 mr/hr	0.143 mr/hr
White Oak Dam	0.012 mr/hr	0.006 mr/hr	0.005 mr/hr
Rainfall	None	0.95 inches	0.0 inches
Curies Discharged	30.8 total	22.8 total	15.1 total

General

The progress of the annual mud assay has been slowed down by equipment difficulties.

The upper gate of White Oak Dam was lowered to 6.0 on May 11 to facilitate mud sampling in the upper end of the lake.

Seven mud samples were collected and assayed during this week.

W. D. Cottrell
Waste Disposal Survey

WDC:cs

CLASSIFICATION CANCELLED
DATE 12-15-54
For The Atomic Energy Commission
H. F. Cope
Chief, Declassification Branch

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1. J. C. Hart
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6. E. J. Witkowski
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8. R. G. Lawler
9. H. J. McAlduff
10. L. R. Setter
11. O. R. Placak
12. C. File
13. C. File
14. R. File

June 4, 1948

OAK RIDGE NATIONAL LABORATORY
CENTRAL FILES NUMBER
48-6-154

To: J. C. Hart

From: W. D. Cottrell

Subject: Waste Monitoring Weekly Report for Week Ending May 29, 1948.

AIR ACTIVITY MONITORING AND STUDY

General

The percentage data loss on the three outdoor constant air monitors was 1.4% for the week ending May 29, 1948 as compared to 7.7% for the previous week. The percentage wind data loss was 7.2%, all of which was due to failure to change the chart on the wind recording instrument on Saturday, May 29, 1948.

Air Contamination Instances

In three instances the air activity rose above 10% of the tolerance value of 8.5×10^{-8} μc/cc for I^{131}. The duration of these instances was approximately one hour and occurred at times which would give a possible exposure to the minimum number of personnel.

Meteorological Data

Number of Inversions	6
Inches of Rainfall	0.90
Prevailing Wind Direction	East - 63%
Average Wind Velocity	5.0 mi/hr

Wind direction frequency percentages and average directional velocities are tabulated on the following page.

[redacted]

This document has been approved for release to the public by:

David R Hamrin 6/19/95
Technical Information Officer ORNL Site — Date

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4-15-59
DATE — SIGNATURE

Direction	Frequency	Velocity
North	12.8%	2.8 mi/hr
Northeast	0.6%	2.0 mi/hr
East	62.8%	5.5 mi/hr
Southeast	8.3%	3.8 mi/hr
South	5.8%	4.3 mi/hr
Southwest	5.8%	7.0 mi/hr
West	3.8%	5.8 mi/hr
Northwest	0.0%	---

LIQUID WASTE DISPOSAL MONITORING AND RESEARCH

Routine Monitoring Results

Immersion gamma counts of 5 daily samples each of Dam and Settling Basin Water indicate an activity reduction factor of 9.5 as compared to 9.0 as indicated by the results of the gross beta analyses of the same number of samples on the same days.

Attached is a tabulation of the gamma radiation values together with the approximate amounts of radiation which would be received from beta emitters in the effluents on the same days surveyed. These gamma values represent radiation intensities on the basis of immersion in infinite volume assuming an average gamma ray energy of 0.7 Mev. The beta values are calculated according to the method set forth in CH-2565, "Operating Equations and Procedures Involved in Water Counting at Site X", by K. Z. Morgan, assuming an average beta ray energy of 0.3 Mev.

The gamma determinations made at the laundry for this week showed 10% discrepancies. In one case out of ten the net count on the small vessel was larger than the net count on the large vessel. These determinations were made by the single vessel method using a large and a small vessel.

Discharge activity averages and pertinent data are tabulated below:

	Week Ending May 29	Week Ending May 22	Week Ending May 15
Settling Basin	0.19 mr/hr	0.31 mr/hr	0.460 mr/hr
White Oak Dam	0.92 mr/hr	0.03 mr/hr	0.012 mr/hr
Rainfall	0.90 inches	None	None
Curies Discharged	8.7 total	13.1 total	30.8 total

General

A total of 19 cores of mud were collected and assayed for activity this week.

Samples of dried sludge were collected from the Weste Village sewage disposal plant and will be assayed for radioactivity.

W. D. Cottrell

W. D. Cottrell
Waste Disposal Survey

WDC:cs

Date	--Settling Basin-- mrep/hr* 206 - 11 A.M. Analyses	β mrep/hr* Waste Mon. Analyses	γ mr/hr** Aver. Small and Large	----White Oak Dam---- β mrep/hr* Waste Mon. Analyses	γ mr/hr** Aver. Small and Large
5-24-48	0.44	0.45	0.26	0.05	0.02
5-25-48	0.40	0.59	0.20	0.06	0.03
5-26-48	0.41	0.49	0.20	0.05	0.02
5-27-48	0.46	0.51	0.23	0.06	0.01
5-28-48	0.49	0.23***	0.06***	0.05	0.02
Aver.		0.45	0.19	0.05	0.02

* mrep/hr = 2.8×10^{-3} N (N = c/m/ml)

** mr/hr = 6.2×10^{-4} S/3 (S = c/m small cylinder)

** mr/hr = 4.1×10^{-4} L/3 (L = c/m large cylinder)

*** Settling Basin samples taken from White Oak Creek on 5-28 as the Settling Basin was being by-passed on this date.

CLASSIFICATION CANCELLED
DATE 12-15-54
For The Atomic Energy Commission
Chief, Declassification Branch

OAK RIDGE NATIONAL LABORATORY
CENTRAL FILES NUMBER
48-6-332

1. J. C. Hart
2. T. H. J. Burnett
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8. R. G. Lawler
9. H. J. McAlduff
10. L. R. Setter
11. C. R. Placak
12. C. File
13. C. File
14. R. File
15. W. D. Cottrell

June 15, 1948

To: J. C. Hart

From: W. D. Cottrell

Subject: Waste Monitoring Weekly Report for Week Ending June 12, 1948

AIR ACTIVITY MONITORING AND STUDY

General

The percentage data loss for the week ending June 12, 1948 was 5.9% on the three outdoor constant air monitors and 3.6% on the wind direction and velocity recording instrument.

Air Contamination Instances

In five instances the air activity rose above 10% of the tolerance value of 8.5×10^{-8} μc/cc for I^{131}. All instances occurred during periods of low wind velocity and thermal inversion. The average duration of these periods was approximately one hour and occurred at times which would give a possible exposure to the minimum number of personnel.

Meteorological Data

Number of Inversions	6
Inches of Rainfall	0.20
Prevailing Wind Direction	East - 43%
Average Wind Velocity	5.7 mi/hr

Wind direction frequency percentages and average directional velocities are tabulated on the following page.

[redacted]

[redacted]

This document has been approved for release to the public by:

David R. Hamrin 5/11/95
Technical Information Officer ORNL Site — Date

Direction	Frequency	Velocity
North	0.0%	---
Northeast	1.9%	8.3 mi/hr
East	42.6%	3.4 mi/hr
Southeast	2.5%	5.0 mi/hr
South	2.5%	0.5 mi/hr
Southwest	22.2%	9.0 mi/hr
West	28.4%	6.9 mi/hr
Northwest	0.0%	---

LIQUID WASTE DISPOSAL AND RESEARCH

Routine Monitoring Results

Immersion gamma counts of five daily samples each of Dam and Settling Basin Water indicate an activity reduction factor of 21.8 as compared to a factor of 17.4 as indicated by the same number of beta counts taken at the same time.

In the attached tabulation are given the gamma radiation values together with the approximate amounts of radiation that would be received from beta emitters in the effluents on the same days surveyed. These values represent radiation intensities on the basis of immersion in infinite volume assuming an average gamma ray energy of 0.7 Mev. and an average beta ray energy of 0.3 Mev. All values are calculated according to the methods set forth in CH-2565, "Operating Equations and Procedures Involved in Water Counting at Site X", by K. Z. Morgan.

Agreement between the gamma determinations made at the laundry for this week was only fair. In 10% of the cases, the net count on the small vessel was larger than the net count on the large vessel. These determinations were made by the single vessel method using a large and a small vessel.

Discharge activity averages and pertinent data are tabulated below:

	Week Ending June 12	Week Ending June 5	Week Ending May 29
Settling Basin	0.24 mr/hr	0.25 mr/hr	0.19 mr/hr
White Oak Dam	0.01 mr/hr	0.11 mr/hr	0.02 mr/hr
Rainfall	0.20 inches	None	0.90 inches
Cuties Discharged	14.3 total	8.7 total	8.7 total

General

Eleven mud samples were collected at various locations on the X-10 Area for a special activity check. This work is being done in an effort to determine the extent of soil contamination from secondary atmospheric pollution.

The "hot particle" investigation is progressing favorably. A number of particles were collected from the exhaust gases from 105 by lowering an oil soaked rag into the vent duct just south of 115-B. These particles were extracted with carbon tetrachloride and washed with petroleum ether. Individual particles were isolated and will be analyzed microscopically and spectroscopically, and counted for decay.

W. D. Cottrell
Waste Disposal Survey

WDC:cs

[redacted]

Date	Settling Basin β mrep/hr* 206 - 11 A.M. Analyses	Settling Basin β mrep/hr* Waste Mon. Analyses	Settling Basin γ mr/hr** Aver. Small and Large	White Oak Dam β mrep/hr* Waste Mon. Analyses	White Oak Dam γ mr/hr** Aver. Small and Large
6-7-48	0.85	1.05	0.26	0.05	0.01
6-8-48	0.80	0.93	0.23	0.05	0.02
6-9-48	0.72	0.87	0.24	0.05	0.01
6-10-48	0.65	0.75	0.26	0.04	0.01
6-11-48	0.57	0.67	0.22	0.05	0.01
Average	0.72	0.85	0.24	0.05	0.01

* mrep/hr = 2.8×10^{-3} N (N= c/m/ml)

** mr/hr = $6.2 \times 10^{-4} \times S/3$ (S = c/m small cylinder)

** mr/hr = $4.1 \times 10^{-4} \times L/3$ (L = c/m large cylinder)

[redacted]

[redacted]

C-7.

1. J. C. Hart
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15. W. D. Cottrell

CLASSIFICATION CANCELLED
DATE 12-15-54
For The Atomic Energy Commission
H. L. Smith for the
Chief, Declassification Branch

June 28, 1948

OAK RIDGE NATIONAL LABORATORY
CENTRAL FILES NUMBER
48-7-15

To: J. C. Hart

From: W. D. Cottrell

Subject: Waste Monitoring Weekly Report for Week Ending June 19, 1948

AIR ACTIVITY MONITORING AND STUDY

General

The percentage data loss for the week ending June 19, 1948 was 26.0% on the three outdoor constant air monitors and 4.6% on the wind direction and velocity recording instrument.

Air Contamination Instances

In one instance the air activity rose above 10% of the tolerance value of 8.5×10^{-8} μc/cc for I^{131}. This instance occurred during a period of low wind velocity and thermal inversion. The average duration of this period was approximately one hour and occurred between the hours of 11:00 and 12:00 A.M. on June 14, 1948.

Meteorological Data

Number of Inversions	6
Inches of Rainfall	0.60
Prevailing Wind Direction	Southwest (46%)
Average Wind Velocity	5.7 mi/hr

Wind direction frequency percentages and average directional velocities are tabulated on the following page.

[redacted]

This document has been approved for release to the public by:

David R Hamming 5/6/96
Technical Information Officer, ORNL Site — Date

RELEASE APPROVED
BY PATENT BRANCH
4-15-57
DATE — Signature

Direction	Frequency	Velocity
North	8.8%	2.6 mi/hr
Northeast	3.2%	5.6 mi/hr
East	21.5%	5.6 mi/hr
Southeast	7.6%	4.2 mi/hr
South	3.2%	2.6 mi/hr
Southwest	46.2%	6.8 mi/hr
West	9.5%	5.5 mi/hr
Northwest	0.0%	---

LIQUID WASTE DISPOSAL AND RESEARCH

Routine Monitoring Results

Immersion gamma counts of four daily samples each of Dam and Settling Basin Water indicate an activity reduction factor of 29.6 as compared to a factor of 15.5 as indicated by the same number of beta counts taken at the same time.

In the attached tabulation are given the gamma radiation values together with the approximate amounts of radiation that would be received from beta emitters in the effluents on the same days surveyed. These values represent radiation intensities on the basis of immersion in infinite volume assuming an average gamma ray energy of 0.7 Mev. and an average beta ray energy of 0.3 Mev. All values are calculated according to the methods set forth in CH-2565, "Operating Equations and Procedures Involved in Water Counting at Site X", by K. Z. Morgan.

Agreement between the gamma determinations made at the laundry for this week was good. In no case, the net count on the small vessel was larger than the net count on the large vessel. These determinations were made by the single vessel method using a large and a small vessel.

Discharge activity averages and pertinent data are tabulated below:

	Week Ending June 19	Week Ending June 12	Week Ending June 5
Settling Basin	0.21 mr/hr	0.24 mr/hr	0.25 mr/hr
White Oak Dam	0.01 mr/hr	0.01 mr/hr	0.11 mr/hr
Rainfall	0.60 inches	0.20 inches	None
Curies Discharged	14.94 total	14.3 total	8.7 total

General

Six soil samples were collected and analyzed this week. This work is being done as a preliminary to establishing permanent sampling points for the determination of surface contamination and for correlation with stream contamination from secondary atmospheric pollution.

The information obtained from the preliminary "Hot Particle" investigation caused the investigation to be given high priority and on June 17, our forces were mobilized and a partial survey of the area was conducted. This survey was continued on June 18 and some 62 samples were collected for analysis. The progress of this operation is being reported verbally on a daily and a weekly basis. A detailed report will be submitted upon the conclusion of the investigation.

On June 14, algae was found to be escaping from the Settling Basin into White Oak Creek due to maintenance work being done on the woodwork in the Basin. This condition was corrected promptly by placing screens over the outlet weirs and in the meantime, the Dam gate was raised well above the lake level to prevent any of the algae from escaping into Clinch River.

The level of the Settling Basin was lowered approximately eighteen inches on June 15 and 16 by pumping from the Basin directly into White Oak Creek. The volume of liquid pumped out is estimated to be 750,000 gallons and the curie content of this volume to be 1.76 curies.

W. D. Cottrell

W. D. Cottrell
Waste Disposal Survey

WDC:cs

[redacted]

Date	- - - - - - Settling Basin	- - - - - -	- - - - - -	- - - White Oak Dam	- - -
	β mrep/hr* 206 - 11 A.M. Analyses	β mrep/hr* Waste Mon. Analyses	γ mr/hr** Aver. Small and Large	β mrep/hr* Waste Mon. Analyses	γ mr/hr** Aver. Small and Large
6-14-48	1.63	0.613	0.206	0.034	0.008
6-15-48	0.470	0.610	0.210	0.042	0.004
6-16-48	0.454	0.621	0.207	0.034	0.008
6-17-48	***	0.637	0.205	0.034	0.008
Average	0.72	0.620	0.207	0.036	0.007

* mrep/hr = 2.8×10^{-3} N (N = c/m/ml)

** mr/hr = 6.2×10^{-4} S/3 (S = c/m small cylinder)

** mr/hr = 4.1×10^{-4} L/3 (L = c/m large cylinder)

*** No discharge made from Settling Basin

[redacted]

[redacted]

C. 7.

OAK RIDGE NATIONAL LABORATORY
CENTRAL FILES NUMBER
48-7-66

1. J. C. Hart
2. T. H. J. Burnett
3. K. Z. Morgan
4. F. Western
5. L. B. Emlet
6. E. J. Witkowski
7. W. D. Cottrell
8. W. D. Cottrell
9. R. G. Lawler
10. H. J. McAlduff
11. L. R. Setter
12. O. R. Placak
13. C. Files
14. C. Files
15. R. Files

July 2, 1948

CLASSIFICATION CANCELLED
DATE 12-15-54
For The Atomic Energy Commission
H. M. Parker for the
Chief, Declassification Branch

To: J. C. Hart

From: W. D. Cottrell

Subject: Waste Monitoring Weekly Report for Week Ending June 26, 1948

AIR ACTIVITY MONITORING AND STUDY

General

The percentage data loss for the week ending June 26, 1948 was 28.0% on the three outdoor constant air monitors and 8.3% on the wind direction and velocity recording instrument.

Air Contamination Instances

In one instance the air activity rose above 10% of the tolerance value of 8.5×10^{-8} μc/cc for I^{131}. This instance occurred during a period of low wind velocity and thermal inversion. The average duration of this period was approximately two hours and occurred at a time which would give a possible exposure to the minimum number of personnel.

Meteorological Data

Number of Inversions	7
Inches of Rainfall	0.70
Prevailing Wind Direction	Southwest - 51%
Average Wind Velocity	5.7 mi/hr

Wind direction frequency percentages and average directional velocities are tabulated on the following page.

[redacted]

This document has been approved for release to the public by:

David K. Hamin 5/11/95
Technical Information Officer ORNL Site — Date

RELEASE APPROVED
BY PATENT BRANCH
4-15-59 [signature]
DATE — SIGNATURE

Direction	Frequency	Velocity
North	0.0%	---
Northeast	0.0%	---
East	8.5%	2.1 mi/hr
Southeast	10.0%	4.6 mi/hr
South	10.8%	4.9 mi/hr
Southwest	50.8%	5.7 mi/hr
West	20.0%	6.3 mi/hr
Northwest	0.0%	---

LIQUID WASTE DISPOSAL AND RESEARCH

Routine Monitoring Results

Immersion gamma counts of five daily samples each of Dam and Settling Basin Water indicate an activity reduction factor of 17.4 as compared to a factor of 11.6 as indicated by the same number of beta counts taken at the same time.

In the attached tabulation are given the gamma radiation values together with the approximate amounts of radiation that would be received from beta emitters in the effluents on the same days surveyed. These values represent radiation intensities on the basis of immersion in infinite volume assuming an average gamma ray energy of 0.7 Mev. and an average beta ray energy of 0.3 Mev. All values are calculated according to the methods set forth in CH-2565, "Operating Equations and Procedures Involved in Water Counting at Site X", by K. Z. Morgan.

Agreement between the gamma determinations made at the laundry for this week was poor. In 30% of the cases, the net count on the small vessel was larger than the net count on the large vessel. These determinations were made by the single vessel method using a large and a small vessel.

Discharge activity averages and pertinent data are tabulated below:

	Week Ending June 26	Week Ending June 19	Week Ending June 12
Settling Basin	0.12 mr/hr	0.21 mr/hr	0.24 mr/hr
White Oak Dam	0.01 mr/hr	0.01 mr/hr	0.01 mr/hr
Rainfall	0.70 inches	0.60 inches	0.20 inches
Curies Discharged	7.27 total	14.9 total	14.3 total

General

The progress of the Annual Mud Assay has been held up due to shortage of personnel, equipment and priority given "Operation Particle".

The data from the hot particle investigation is in the process of being tabulated and summarized.

The new motor has been given a preliminary test and seems to be satisfactory.

The river sampling program is being held up due to the delay in constructing a hood over the sample evaporator.

W. D. Cottrell

W. D. Cottrell
Waste Disposal Survey

WDC:cs

[redacted]

Date	Settling Basin — β mrep/hr* 206 - 11 A.M. Analyses ***	Settling Basin — β mrep/hr* Waste Mon. Analyses	Settling Basin — γ mr/hr** Aver. Small and Large	White Oak Dam — β mrep/hr* Waste Mon. Analyses	White Oak Dam — γ mr/hr** Aver. Small and Large
6-21-48	1.23	0.394	0.140	0.029	0.010
6-22-48	1.82	0.322	0.133	0.031	0.005
6-23-48	0.53	0.353	0.119	0.032	0.005
6-24-48	1.19	0.375	0.116	0.036	0.007
6-25-48	2.68	0.353	0.101	0.030	0.007
Average	1.67	0.359	0.122	0.031	0.007

* mrep/hr = 2.8×10^{-3} N (N = c/m/ml)

** mr/hr = 6.2×10^{-4} x S/3 (S = c/m small cylinder)

** mr/hr = 4.1×10^{-4} x L/3 (L = c/m large cylinder)

*** 206 Analyses were made on the east pond as all waste was being by-passed into the east pond during this period.

[redacted]

OAK RIDGE NATIONAL LABORATORY
CENTRAL FILES NUMBER
48-7-168

[redacted]

e.7.

1.	J. C. Hart	9.	R. G. Lawler
2.	T. H. J. Burnett	10.	H. J. McAlduff
3.	K. Z. Morgan	11.	L. R. Setter
4.	F. Western	12.	O. R. Placak
5.	L. B. Emlet	13.	C. Files
6.	E. J. Witkowski	14.	C. Files
7.	W. D. Cottrell	15.	R. Files
8.	W. D. Cottrell		

July 12, 1948

CLASSIFICATION CANCELLED
DATE 12-15-54
For The Atomic Energy Commission
H. F. Carroll for the
Chief, Declassification Branch

To: J. C. Hart

From: W. D. Cottrell

Subject: Waste Monitoring Weekly Report for Week Ending July 3, 1948

AIR ACTIVITY MONITORING AND STUDY

General

The percentage data loss for the week ending July 3, 1948 was 13.9% on the three outdoor constant air monitors and 7.2% on the wind direction and velocity recording instrument. The data loss on the individual air monitors was 17.8% on 706-A, 23.2% on 115-B, and 0.6% on 735-B.

Air Contamination Instances

In two instances the air activity rose above 10% of the tolerance value of 8.5×10^{-8} µc/cc for I^{131}. These instances occurred during periods of low wind velocity and thermal inversion. The average duration of these periods was approximately one hour and occurred at times which would give a possible exposure to the minimum number of personnel.

Meteorological Data

Number of Inversions	7
Inches of Rainfall	0.30
Prevailing Wind Direction	West - 26%
Average Wind Velocity	4.7 mi/hr

Wind direction frequency percentages and average directional velocities are tabulated on the following page.

[redacted]

RELEASE APPROVED BY PATENT BRANCH
4-15-52 DATE
SIGNATURE

This document has been approved for release to the public by:

David R. Hamrin 5/11/95
Technical Information Officer, ORNL Site Date

[redacted]

RELEASE APPROVED BY PATENT BRANCH
DATE SIGNATURE

Direction	Frequency	Velocity
North	21.8%	2.6 mi/hr
Northeast	7.1%	5.5 mi/hr
East	10.3%	2.1 mi/hr
Southeast	8.3%	4.7 mi/hr
South	7.1%	4.1 mi/hr
Southwest	19.2%	6.3 mi/hr
West	26.3%	3.7 mi/hr
Northwest	0.0%	---

LIQUID WASTE DISPOSAL AND RESEARCH

Routine Monitoring Results

Immersion gamma counts of five daily samples each of Dam and Settling Basin Water indicate an activity reduction factor of 38.0 as compared to a factor of 31.1 as indicated by the same number of beta counts taken at the same time.

In the attached tabulation are given the gamma radiation values together with the approximate amounts of radiation that would be received from beta emitters in the effluents on the same days surveyed. These values represent radiation intensities on the basis of immersion in infinite volume assuming an average gamma ray energy of 0.7 Mev. and an average beta ray energy of 0.3 Mev. All values are calculated according to the methods set forth in CH-2565, "Operating Equations and Procedures Involved in Water Counting at Site X", by K. Z. Morgan.

Discharge activity averages and pertinent data are tabulated below:

	Week Ending July 5	Week Ending June 26	Week Ending June 19
Settling Basin	0.27 mr/hr	0.12 mr/hr	0.21 mr/hr
White Oak Dam	0.01 mr/hr	0.01 mr/hr	0.01 mr/hr
Rainfall	0.30 inches	0.70 inches	0.60 inches
Curies Discharged	12.2 total	7.27 total	14.9 total

General

"Operation Particle" is progressing with additional efforts being made at identification by Radiochemical analysis and by means of X-ray diffraction.

W. D. Cottrell
W. D. Cottrell
Waste Disposal Survey

WDC:cs

[redacted]

Date	Settling Basin - β mrep/hr* 206 - 11 A.M. Analyses***	Settling Basin - β mrep/hr* Waste Mon. Analyses	Settling Basin - γmr/hr** Aver. Small and Large	White Oak Dam - βmrep/hr* Waste Mon. Analyses	White Oak Dam - γ mr/hr** Aver. Small and Large
6-28-48	1.565	0.255	0.071	0.031	0.013
6-29-48	0.490	1.448***	0.423***	0.028	0.009
6-30-48	0.579	0.708	0.233	0.028	0.008
7-1-48	1.106	0.663	0.184	0.025	0.004
7-2-48	0.176	1.080	0.475	0.022	0.003
Average	0.783	0.831	0.267	0.027	0.007

* mrep/hr = 2.8×10^{-3} N (N = c/m/ml)

** mr/hr = $6.2 \times 10^{-4} \times S/3$ (S = c/m small cylinder)

** mr/hr = $4.1 \times 10^{-4} \times L/3$ (L = c/m large cylinder)

*** 206 Analyses were made on the east pond as all waste was being by-passed into the east pond during this period. Waste Monitoring analyses were made on the east pond 6-29-48 to 7-2-48 inclusive.

[redacted]

J-4

[redacted]

1. J. C. Hart
2. T. H. J. Burnett
3. K. Z. Morgan
4. F. Western
5. L. B. Emlet
6. E. J. Witkowski
7. W. D. Cottrell
8. W. D. Cottrell
9. R. G. Lawler
10. H. J. McAlduff
11. L. R. Setter
12. O. R. Placak
13. C. Files
14. C. Files
15. R. Files

C.7.

DECLASSIFIED Per Letter Instructions Of List No. 36

July 20, 1948

OAK RIDGE NATIONAL LABORATORY
CENTRAL FILES NUMBER
48-7-319

WASTE MONITORING WEEKLY REPORT FOR WEEK ENDING JULY 17, 1948

I. Air Activity Monitoring and Study

A. General

The percentage data loss for the week ending July 17, 1948 was 2.4% on the three outdoor constant air monitors and 0.6% on the wind direction and velocity recording instrument. The data loss on the individual air monitors was 7.1% on 706-A, 0.0% on 115-B, and 0.0% on 735-B.

B. Air Contamination Instances

In three instances the air activity rose above 10% of the tolerance value of 8.5×10^{-8} μc/cc for I^{131}. These instances occurred during periods of low wind velocity and thermal inversion. The period of maximum activity occurred between the hours of 11:00 and 12:00 A.M. on 7-15-48, and was approximately 40% of tolerance based on I^{131}. This instance is being investigated and will be reported by H. J. McAlduff.

C. Meteorological Data

1. Number of Inversions - 5
2. Inches of Rainfall - 3.50
3. Prevailing Wind Direction - S.W. - 65%
4. Average Wind Velocity - 6.1 mi/hr

[redacted]

[redacted]

This document has been approved for release to the public by:

David R. Hamrin 5/6/15
Technical Information Officer ORNL Site — Date

Wind direction frequency percentages and average directional velocities are tabulated below:

Direction	Frequency	Velocity
North	0.0%	---
Northeast	0.0%	---
East	9.0%	7.2 mi/hr
Southeast	4.8%	2.7 mi/hr
South	12.0%	3.1 mi/hr
Southwest	65.8%	6.8 mi/hr
West	8.4%	5.1 mi/hr
Northwest	0.0%	---

II. Liquid Waste Disposal and Research

A. General

The rubber life raft to be used in sampling the intermediate pond has been received. Mr. F. J. Aldwin of the United States Army was given five days of training in Waste Monitoring work. Four water samples were assayed for P. E. Brown from Y-12. The results have been reported separately.

Background studies are continuing with additional samples of distilled, tap, and White Oak Creek dilution water being studied.

The Waste Monitoring Laboratory is sadly lacking in facilities and equipment. The laboratory center table which was ordered on 3-31-48 has been promised us in September, 1948.

B. Routine Monitoring Results

Immersion gamma counts of five daily samples each of Dam and Settling Basin Water indicate an activity reduction factor of 34.7 as compared to a factor of 36.3 as indicated by the same number of beta counts taken at the same time.

In the attached tabulation are given the gamma radiation values together with the approximate amounts of radiation that would be received from beta emitters in the effluents on the same days surveyed. These values represent radiation intensities on the basis of immersion in infinite volume assuming an average gamma ray energy of 0.7 Mev. and an average beta ray energy of 0.3 Mev. All values are calculated according to the methods set forth in CH-2565, "Operating Equations and Procedures Involved in Water Counting at Site X", by K. Z. Morgan.

Discharge activity averages and pertinent data are tabulated below:

	Week Ending July 17	Week Ending July 10	Week Ending July 3
Settling Basin	0.239 mr/hr	0.340 mr/hr	0.27 mr/hr
White Oak Dam	0.007 mr/hr	0.004 mr/hr	0.01 mr/hr
Rainfall	3.50 inches	0.40 inches	0.30 inches
Curies Discharged	6.88 total	5.02 total	12.2 total

W. D. Cottrell
W. D. Cottrell
Waste Monitoring

WDC:cs

[redacted]

Date	Settling Basin — β mrep/hr* 206 - 11 A.M. Analyses	Settling Basin — β mrep/hr* Waste Mon. Analyses	Settling Basin — γ mr/hr** Aver. Small and Large	White Oak Dam — β mrep/hr* Waste Mon. Analyses	White Oak Dam — γ mr/hr** Aver. Small and Large
7-12-48	0.875	0.845	0.379	0.019	0.005
7-13-48	0.562	0.812	0.386	0.017	0.007
7-14-48	0.560	0.753	0.148	0.019	0.008
7-15-48	0.249	0.302	0.136	0.016	0.006
7-16-48	0.459	0.370	0.145	0.016	0.005
Average	0.541	0.616	0.239	0.017	0.006

* mrep/hr = 2.8×10^{-3} N (N = c/m/ml)

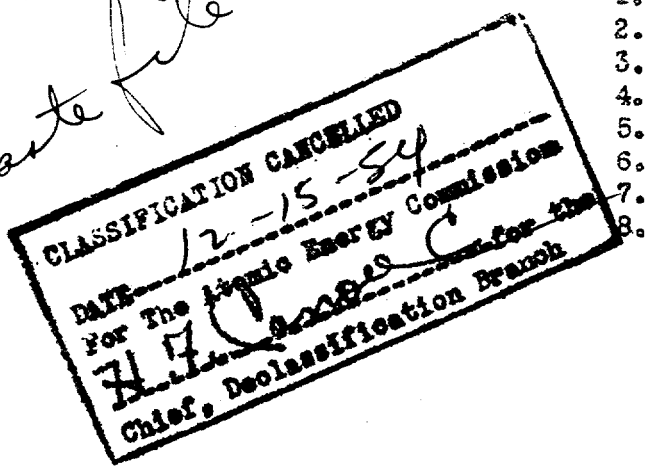
** mr/hr = $6.2 \times 10^{-4} \times S/3$ (S = c/m small cylinder)

** mr/hr = $4.1 \times 10^{-4} \times L/3$ (L = c/m large cylinder)

[redacted]

[redacted] Stewart McClain

waste file



1. J. C. Hart
2. T. H. J. Burnett
3. K. Z. Morgan
4. F. Western
5. L. B. Emlet
6. E. J. Witkowski
7. W. D. Cottrell
8. W. D. Cottrell
9. R. G. Lawler
10. H. J. McAlduff
11. L. R. Setter
12. O. R. Placak
13. ~~O. Files~~
14. C. Files
15. R. Files

c-7

OAK RIDGE NATIONAL LABORATORY
CENTRAL FILES NUMBER
48-8-89

July 31, 1948

WASTE MONITORING WEEKLY REPORT FOR WEEK ENDING JULY 31, 1948

I. Air Activity Monitoring and Study

A. General

The percentage data loss for the week ending July 31, 1948 was 20.8% on the three outdoor constant air monitors and 6.6% on the wind direction and velocity recording instrument. The data loss on the individual air monitors was 41.0% on 706-A, 17.8% on 115-B, and 3.57% on 735-B.

B. Air Contamination Instances

In five instances the air activity rose above 10% of the tolerance value of 8.5×10^{-8} μc/cc for I^{131}. In one instance on July 29, 1948, air activity was recorded in the amount of 122.4% of tolerance value. Although the rupture of five slugs in the pile occurred during this week contributing to increased general air activity, the highest activity was recorded at 706-A building. This activity occurred at a time when the maximum number of people could have been exposed (8:00 to 10:00 A.M.) and is sufficiently serious to warrant a thorough investigation as to the source. This is particularly needed as the number of instances of high activity recorded by the monitor at 706-A has been steadily increasing both in number and severity.

C. Meteorological Data

1. Number of Inversions - 5
2. Inches of Rainfall - 1.50
3. Prevailing Wind Direction - S.W. - 36.9%
4. Average Wind Velocity - 3.9 m.p.h.

This document has been approved for release to the public by:

David C Hamm 5/11/95
Technical Information Officer ORNL Site — Date

[redacted]

Wind direction frequency percentages and average directional velocities are tabulated below:

Direction	Frequency	Velocity
North	2.6%	1.6 m.p.h.
Northeast	0.0%	---
East	12.7%	2.7 m.p.h.
Southeast	14.7%	4.5 m.p.h.
South	21.0%	2.8 m.p.h.
Southwest	36.9%	5.5 m.p.h.
West	12.1%	1.6 m.p.h.
Northwest	0.0%	---

II. Liquid Waste Disposal and Research

A. General

Studies for beta activity were made on 28 mud samples from White Oak Lake. Of these, a ten inch stratification sample showed uniform activity through the first seven inches. A second group of mud samples were obtained Friday for additional studies for the week beginning 8-1-48.

Work has been completed on the hood for 15 liter sample evaporation; so, we plan to reduce materially this week our back log of large water samples from the Settling Basin and White Oak Dam.

B. Routine Monitoring Results

Immersion gamma counts of four daily samples each of Dam and Settling Basin water indicate an activity reduction factor of 29.0 as compared to a factor of 33.3 as indicated by the same number of beta counts taken at the same time.

In the attached tabulation are given the gamma radiation values together with the approximate amounts of radiation that would be received from beta emitters in the effluents on the same days surveyed. These values represent radiation intensities on the basis of immersion in infinite volume assuming an average gamma ray energy of 0.7 Mev. and an average beta ray energy of 0.3 Mev. All values are calculated according to the methods set forth in CH-2565, "Operating Equations and Procedures Involved in Water Counting at Site X", by K. Z. Morgan.

[redacted]

Discharge activity averages and pertinent data are tabulated below:

	Week Ending July 31	Week Ending July 24	Week Ending June 17
Settling Basin	0.3420 mr/hr	0.257 mr/hr	0.239 mr/hr
White Oak Dam	0.0118 mr/hr	0.006 mr/hr	0.007 mr/hr
Rainfall	1.50 inches	0.60 inches	3.50 inches
Curies Discharged	11.87 total	8.78 total	6.88 total

R G Lawler

R. G. Lawler
Waste Monitoring

RGL:cs

Date	Settling Basin: β mrep/hr* 206 - 11 A.M. Analyses***	Settling Basin: β mrep/hr* Waste Mon. Analyses	Settling Basin: γ mr/hr** Aver. Small and Large	White Oak Dam: β mrep/hr* Waste Mon. Analyses	White Oak Dam: γ mr/hr** Aver. Small and Large
7-26-48	0.299	0.305	0.117	0.028	0.0095
7-27-48	0.408	0.459	0.197	0.022	0.0095
7-28-48	0.840	0.784	0.319	0.022	0.1350
7-29-48	0.658	0.854	0.331	0.028	0.0220
7-30-48	1.712	1.772	0.747	0.025	0.0065
Average	0.783	0.833	0.342	0.025	0.118

* mrep/hr = 2.8×10^{-3} N (N = c/m/ml)

** mr/hr = 6.2×10^{-4} x S/3 (S = c/m small cylinder)

** mr/hr = 4.1×10^{-4} x L/3 (L = c/m large cylinder)

[redacted]

C 7.

OAK RIDGE NATIONAL LABORATORY
CENTRAL FILES NUMBER
48-8-222

1. J. C. Hart
2. T. H. J. Burnett
3. K. Z. Morgan
4. F. Western
5. L. B. Emlet
6. E. J. Witkowski
7. W. D. Cottrell
8. H. J. McAlduff
9. L. R. Setter
10. O. R. Placak
11. R. G. Lawler
12. C. File
13. C. File
14. R. File

CLASSIFICATION CANCELLED
DATE 12-15-54
For The Atomic Energy Commission
H. F. Carroll for the
Chief, Declassification Branch

August 9, 1948

To: J. C. Hart

From: R. G. Lawler

Subj: Waste Monitoring Weekly Report for Week Ending August 7, 1948

I. Air Activity Monitoring and Study

A. General

The percentage data loss on the three outdoor constant air monitors was 2.2% for the week ending August 7, 1948 as compared to 20.8% for the previous week. The percentage wind data loss was 20.1%.

B. Air Contamination Instances

In two instances the air activity rose above 10% of the tolerance value of 8.5×10^{-8} $\mu c/cc$ for I^{131}. The duration of these instances was approximately one hour and occurred at times which would give a possible exposure to the minimum number of personnel.

C. Meteorological Data

Number of Inversions	2
Inches of Rainfall	1.3
Prevailing Wind Direction	East - 50%
Average Wind Velocity	4.5 mi/hr

Wind direction frequency percentages and average direction velocities are tabulated on the following page.

[redacted]

[redacted]

This document has been approved for release to the public by:

David R Hamrin 5/11/95
Technical Information Officer Date
ORNL Site

Direction	Frequency	Velocity
North	9.7%	2.0 mi/hr
Northeast	7.5%	3.2 mi/hr
East	50.0%	4.5 mi/hr
Southeast	4.5%	5.7 mi/hr
South	3.0%	3.5 mi/hr
Southwest	5.2%	3.4 mi/hr
West	17.9%	6.4 mi/hr
Northwest	2.2%	6.7 mi/hr

II. Liquid Waste Disposal Monitoring and Research

A. General

Studies for β activity were made on 25 mud samples from White Oak Lake.

Stratification results on a 6" sample collected in or near the old channel were:

First inch	-	9103 cts/ m/gm
Second inch	-	2142 cts/ m/gm
Third inch	-	114 cts/ m/gm
Fourth inch	-	226 cts/ m/gm
Fifth inch	-	119 cts/ m/gm
Sixth inch	-	154 cts/ m/gm

β activity results obtained on three 1-liter samples of surface water obtained 7/20/48, at three locations near the guard shack east of 104-B, following a .25" rainfall follow:

Sample No.	Sampling Point	Net Wt. Silt (gm)	Counts/Min Filtrate	Counts/Min Silt	Total Counts
1	From Drain - East of Guard Shack	5.4496	127	904	1031
2	From Drain - North of Guard Shack	3.0200	53	141	194
3	From Puddle - Northwest of Guard Shack	3.6414	62	158	220

Twelve composite samples, 15-liter size from the Settling Basin and Dam were boiled down to approximately 1 liter each and stored for future decay study.

B. Routine Monitoring Results

Immersion gamma counts of 5 daily samples each of Dam and Settling Basin Water indicate an activity reduction factor of 37.3 compared to 26.9 as indicated by the results of the gross beta analyses of the same number of samples on the same days.

Attached is a tabulation of the gamma radiation values together with the approximate amounts of radiation which would be received from beta emitters in the effluents on the same days surveyed. These gamma values represent radiation intensities on the basis of immersion in infinite volume assuming an average gamma ray energy of 0.7 Mev. The beta values are calculated according to the method set forth in CH-2565, "Operating Equations and Procedures Involved in Water Counting at Site X", by K. Z. Morgan, assuming an average beta ray energy of 0.3 Mev.

Discharge activity averages and pertinent data are tabulated below:

	Week Ending August 7	Week Ending July 31	Week Ending July 24
Settling Basin	.334 mr/hr	.3420 mr/hr	0.257 mr/hr
White Oak Dam	.0124 mr/hr	.0118 mr/hr	0.006 mr/hr
Rainfall	1.3 inches	1.50 inches	0.60 inches
Curies Discharged	14.34 total	11.87 total	8.78 total

R. G. Lawler

RGL/ejp

R. G. Lawler
Waste Disposal Survey

[redacted]

Date	Settling Basin: α mrep/hr* 206 - 11 A.M. Analyses	Settling Basin: α mrep/hr* Waste Mon. Analyses	Settling Basin: γ mr/hr** Aver. Small and Large	White Oak Dam: α mrep/hr* Waste Mon. Analyses	White Oak Dam: γ mr/hr** Aver. Small and Large
8/2/48	0.29	0.97	.340	0.036	.0150
8/3/48	1.20	1.78	.436	0.031	.0115
8/4/48	1.26	1.45	.391	0.035	.0090
8/5/48	1.04	0.93	.269	0.025	.0115
8/6/48	1.96	1.04	.236	0.039	.0150
Aver.	1.15	1.23	.334	0.035	.0124

* mrep/hr = 2.8×10^{-3} N (N = c/m/ml)

** mr/hr = 6.2×10^{-4} S/3 (S = c/m small cylinder)

** mr/hr = 4.1×10^{-4} L/3 (L = c/m large cylinder)

[redacted]

[redacted]

C.7.

OAK RIDGE NATIONAL LABORATORY
CENTRAL FILES NUMBER
48-8-352

1. J. C. Hart
2. T. H. J. Burnett
3. K. Z. Morgan
4. F. Western
5. L. B. Emlet
6. E. J. Witkowski
7. W. D. Cottrell
8. W. D. Cottrell
9. R. G. Lawler
10. H. J. McAlduff
11. L. R. Setter
12. O. R. Placak
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August 25, 1948

WASTE MONITORING WEEKLY REPORT FOR WEEK ENDING AUGUST 14, 1948

I. Air Activity Monitoring and Study

A. General

The percentage data loss for the week ending August 14, 1948 was 1.2% on the three outdoor constant air monitors and 0.6% on the wind direction and velocity recording instrument. The data loss on the individual air monitors was 1.8% on 706-A, 1.8% on 115-B, and 0.0% on 735-B.

NB

B. Air Contamination Instances

In one instance the air activity rose above the tolerance value of 8.5×10^{-8} μc/cc for I^{131}. This activity occurred at a time (3:00 to 5:00 A.M.) when the minimum number of personnel could have been exposed.

C. Meteorological Data

1. Number of Inversions - 4
2. Inches of Rainfall - 0.50
3. Prevailing Wind Direction - E - 34.1%
4. Average Wind Velocity - 3.0 m.p.h.

CLASSIFICATION CANCELLED
DATE 12-15-54
For The Atomic Energy Commission
H. M. Parker
Chief, Declassification Branch

[redacted]

[redacted]

This document has been approved for release to the public by:

David R. Hamrin 5/4/95
Technical Information Officer ORNL Site — Date

RELEASE APPROVED
BY PATENT BRANCH

DATE — SIGNATURE

Wind direction frequency percentages and average directional velocities are tabulated below:

Direction	Frequency	Velocity
North	13.8%	3.1 m.p.h.
Northeast	3.0%	4.6 m.p.h.
East	34.1%	2.1 m.p.h.
Southeast	8.4%	2.7 m.p.h.
South	6.6%	1.7 m.p.h.
Southwest	18.0%	5.1 m.p.h.
West	16.1%	3.0 m.p.h.
Northwest	0.0%	--

II. Liquid Waste Disposal and Research

A. General

Self absorption studies were made on eight mud samples from White Oak Lake. These studies are a part of the overall assay of the White Oak Creek drainage system.

B. Routine Monitoring Results

Immersion gamma counts of four daily samples each of Dam and Settling Basin water indicate an activity reduction factor of 28.2 as compared to a factor of 27.4 as indicated by the same number of beta counts taken at the same time.

In the attached tabulation are given the gamma radiation values together with the approximate amounts of radiation that would be received from beta emitters in the effluents on the same days surveyed. These values represent radiation intensities on the basis of immersion in infinite volume assuming an average gamma ray energy of 0.7 Mev. and an average beta ray energy of 0.3 Mev. All values are calculated according to the methods set forth in Ch-2565, "Operating Equations and Procedures Involved in Water Counting at Site X", by K. Z. Morgan.

Discharge activity averages and pertinent data are tabulated below:

	Week Ending August 14	Week Ending August 7	Week Ending July 31
Settling Basin	0.436 mr/hr	0.334 mr/hr	0.342 mr/hr
White Oak Dam	0.016 mr/hr	0.012 mr/hr	0.0118 mr/hr
Rainfall	0.50 inches	1.30 inches	1.50 inches
Curies Discharged	15.0 total	14.34 total	11.87 total

R. G. Lawler

R. G. Lawler
Waste Monitoring

RGL:cs

[redacted]

Date	Settling Basin — mrep/hr* 206 - 11 A.M. Analyses	Settling Basin — mrep/hr* Waste Mon. Analyses	Settling Basin — mr/hr** Aver. Small and Large	White Oak Dam — mrep/hr* Waste Mon. Analyses	White Oak Dam — mr/hr** Aver. Small and Large
8-9-48	1.157	1.366	0.384	0.042	0.012
8-10-48	0.820	0.698	0.230	0.039	0.028
8-11-48	0.910	1.162	0.323	0.056	0.012
8-12-48	1.710	1.971	0.687	0.053	0.010
Average	1.149	1.299	0.436	0.048	0.016

* mrep/hr = 2.8×10^{-3} N (N = c/m/ml)

** mr/hr = $6.2 \times 10^{-4} \times S/3$ (S = c/m small cylinder)

** mr/hr = $4.1 \times 10^{-4} \times L/3$ (L = c/m large cylinder)

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f-4 c.7.

1. J. C. Hart
2. T. H. J. Burnett
3. K. Z. Morgan
4. F. Western
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OAK RIDGE NATIONAL LABORATORY
CENTRAL FILES NUMBER
48-8-358

CLASSIFICATION CANCELLED
DATE 12-15-54
For The Atomic Energy Commission
for the
Chief, Declassification Branch

August 25, 1948

SITE MONITORING WEEKLY REPORT FOR WEEK ENDING AUGUST 21, 1948

I. Air Activity Monitoring and Study

A. General

The percentage data loss on the three outdoor constant air monitors was 5.95% for the week ending August 21, 1948 as compared to 1.2% for the previous week. No wind data was lost.

K NB

B. Air Contamination Instances

In four instances the air activity rose above 10% of the tolerance value of 8.5×10^{-8} μc/cc for I^{131}. In one instance on Tuesday, August 17, 1948, activity in the amount of 113.6% of tolerance was recorded. The CAM at 706-A was not working during this period, and the other two CAM's were partially blocking due to the high counts. It is possible, therefore, that the percent tolerance could have been higher than recorded. Unlike the three other instances of above 10% tolerance, which occurred while inversions of the early morning hours existed, this highest instance was recorded between the hours of 1:00 and 2:00 P.M., when a maximum number of personnel could possibly have been exposed. To date no particular light has been shed on the source of this activity, but further investigation is in progress.

C. Meteorological Data

Number of Inversions	6
Inches of Rainfall	.40
Prevailing Wind Direction	East - 35.7%
Average Wind Velocity	3.2 mi/hr

Wind direction frequency percentages and average directional velocities are tabulated on the following page.

This document has been approved for release to the public by:

David R Hamm 5/11/95
Technical Information Officer, ORNL Site — Date

[redacted]

RELEASE APPROVED
BY PATENT BRANCH
4-15-59

Direction	Frequency	Velocity
North	7.7%	1.4 mi/hr
Northeast	2.4%	2.0 mi/hr
East	35.7%	3.4 mi/hr
Southeast	13.7%	2.4 mi/hr
South	10.1%	2.3 mi/hr
Southwest	17.9%	5.5 mi/hr
West	11.3%	2.0 mi/hr
Northwest	1.2%	4.5 mi/hr

II. Liquid Waste Disposal Monitoring and Research

A. General

A mud turtle reading 50 mr/hr C.P.M.O. @ 3" which was caught in the vicinity of the Settling Basin was turned over to Biology for study.

The water at White Oak Dam was analyzed for Cl content with a Cl comparator, after three million gallons of water from the new reservoir, containing 100 ppm. of Cl, had been dumped into White Oak Creek. Concentrations at the White Oak Dam ranged from a trace to approximately 1.5 ppm. which is understood to be well below the safe allowable limits for plant and animal life.

A hawk observed feeding in the Settling Basin was captured and its excreta examined for activity. No significant counts above background were observed and the hawk was released in the White Oak Dam area.

The riggers have moved the storage hut for the outboard motors, etc., to its new location near White Wing Gate.

B. Routine Monitoring Results

Immersion gamma counts of 5 daily samples each of Dam and Settling Basin Water indicate an activity reduction factor of 24.7 compared to 22.0 as indicated by the results of the gross beta analyses of the same number of samples on the same days.

Attached is a tabulation of the gamma radiation values together with the approximate amounts of radiation which would be received from beta emitters in the effluents on the same days surveyed. These gamma values represent radiation intensities on the basis of immersion in infinite volume assuming an average gamma ray energy of 0.7 Mev. The beta values are calculated according to the method set forth in CH-2565, "Operating Equations and Procedures Involved in Water Counting at Site X", by K. Z. Morgan, assuming an average beta ray energy of 0.3 Mev.

Discharge activity averages and pertinent data are tabulated below:

	Week Ending August 21	Week Ending August 14	Week Ending August 7
Settling Basin	0.4202 mr/hr	0.436 mr/hr	0.334 mr/hr
White Oak Dam	0.017 mr/hr	0.016 mr/hr	0.0124 mr/hr
Rainfall	0.40 inches	0.50 inches	1.3 inches
Curies Discharged	15.49 total	15.0 total	14.34 total

H J McAlduff

H. J. McAlduff
Waste Monitoring

HJMcA:cs

[redacted]

ate	Settling Basin - mrep/hr* 206 - 11 A.M. Analyses	Settling Basin - mrep/hr* Waste Mon. Analyses	Settling Basin - mr/hr** Aver. Small and Large	White Oak Dam - mrep/hr* Waste Mon. Analyses	White Oak Dam - mr/hr** Aver. Small and Large
-16-48	0.633	0.842	0.294	0.058	0.014
-17-48	1.221	1.150	0.303	0.058	0.016
-18-48	1.270	1.274	0.488	0.053	0.015
-19-48	1.062	1.057	0.449	0.053	0.021
-20-48	0.996	1.878	0.567	0.061	0.021
verage	1.037	1.2402	0.420	0.056	0.017

mrep/hr = 2.8×10^{-3} N (N = c/m/ml)

mr/hr = 6.2×10^{-4} S/3 (S = c/m small cylinder)

mr/hr = 4.1×10^{-4} L/3 (L = c/m large cylinder)

[redacted]

CLASSIFICATION CANCELLED
DATE 1-25-54
For The Atomic Energy Commission
Chief, Declassification Branch

C-7.

1. J. C. Hart
2. T. H. J. Burnett
3. K. Z. Morgan
4. F. Western
5. L. B. Emlet
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11. O. R. Placak
12. R. G. Lawler
13. C. Files
14. C. Files
15. R. Files

OAK RIDGE NATIONAL LABORATORY
CENTRAL FILES NUMBER
48-9-27

September 2, 1948

WASTE MONITORING WEEKLY REPORT FOR WEEK ENDING AUGUST 28, 1948

I. Air Activity Monitoring and Study

A. General

The percentage data loss on the three outdoor constant air monitors was 17.1% for the week ending August 28, 1948 as compared to 5.9% for the previous week. The percentage wind data loss was 5.9%.

B. Air Contamination Instances

In seven instances the air activity rose above 10% of the tolerance value of 8.5×10^{-11} μc/cc for I^{131}. The duration of these periods of activity was approximately one hour and occurred at times which would give a possible exposure to the minimum number of personnel. These periods of activity have been steadily increasing in frequency with a slight increase in intensity for the last four weeks and at present have reached a frequency of approximately one period of activity (above 10% tolerance) per 24 hours. This problem is being given immediate attention by this group.

C. Meteorological Data

Number of Inversions	7
Inches of Rainfall	0.0
Prevailing Wind Direction	East - 34%
Average Wind Velocity	2.4 m.p.h.

Wind direction frequency percentages and average directional velocities are tabulated on the following page.

[redacted]

[redacted]

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David R Hamrick 5/11/95
Technical Information Officer ORNL Site — Date

Direction	Frequency	Velocity
North	5.7%	2.4 m.p.h.
Northeast	7.0%	3.9 m.p.h.
East	34.2%	2.1 m.p.h.
Southeast	27.2%	2.9 m.p.h.
South	11.4%	2.1 m.p.h.
Southwest	12.0%	2.0 m.p.h.
West	2.5%	1.0 m.p.h.
Northwest	0.0%	---

II. Liquid Waste Disposal Monitoring and Research

A. General

The problem of White Oak Creek overflowing into the lower portion of the salvage yard will be taken care of by the removal and burial of the contaminated top soil and/or by covering the area over with crushed rock and oil. The area which is approximately 100' x 200' will be abandoned and fenced off as a hot area until such time as the survey of White Oak Creek is completed by the Austin Company, the results of which will determine whether or not any further action is needed.

B. Routine Monitoring Results

Immersion gamma counts of 5 daily samples each of Dan and Settling Basin Water indicate an activity reduction factor of 20.0 compared to 24.5 as indicated by the results of the gross beta analysis of the same number of samples on the same days.

Attached is a tabulation of the gamma radiation values together with the approximate amounts of radiation which would be received from beta emitters in the effluents on the same days surveyed. These values represent radiation intensities on the basis of immersion in infinite volume assuming an average gamma ray energy of 0.7 Mev. and an average beta ray energy of 0.3 Mev. All values are calculated according to the method set forth in CH-2565, "Operating Equations and Procedures Involved in Water Counting at Site X", by K. Z. Morgan.

Discharge activity averages and pertinent data are tabulated below:

	Week Ending August 28	Week Ending August 21	Week Ending August 14
Settling Basin	0.393 mr/hr	0.4202 mr/hr	0.436 mr/hr
White Oak Dam	0.021 mr/hr	0.017 mr/hr	0.016 mr/hr
Rainfall	0.0 inches	0.40 inches	0.50 inches
Curies Discharged	19.67 total	15.49 total	15.0 total

W. D. Cottrell

W. D. Cottrell
Waste Monitoring

WDC:cs

Date	Settling Basin — mrep/hr* 206 - 11 A.M. Analyses	Settling Basin — mrep/hr* Waste Mon. Analyses	Settling Basin — mr/hr** Aver. Small and Large	White Oak Dam — mrep/hr* Waste Mon. Analyses	White Oak Dam — mr/hr** Aver. Small and Large
8-23-48	0.874	0.725	0.278	0.056	0.021
8-24-48	0.966	1.008	0.411	0.056	0.018
8-25-48	0.604	0.725	0.274	0.044	0.027
8-26-48	0.534	2.250	0.436	0.053	0.018
8-27-48	1.895	1.663	0.566	0.053	0.020
Average	0.975	1.274	0.393	0.052	0.021

* mrep/hr = 2.8×10^{-3} N (N = c/m/ml)

** mr/hr = 6.2×10^{-4} S/3 (S = c/m small cylinder)

** mr/hr = 4.1×10^{-4} L/3 (L = c/m large cylinder)

[redacted]

1. J. C. Hart
2. T. H. J. Burnett
3. K. Z. Morgan
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12. R. G. Lawler
13. C. Files
14. C. Files
15. R. Files

CLASSIFICATION CANCELLED
DATE 2-23-54
For The Atomic Energy Commission
H. T. [signature] for the
Chief, Declassification Branch

September 24, 1948

WASTE MONITORING WEEKLY REPORT FOR WEEK ENDING SEPTEMBER 18, 1948

OAK RIDGE NATIONAL LABORATORY
CENTRAL FILES NUMBER
48-9-274

I. Air Activity Monitoring and Study

A. General

The percentage data loss on the three outdoor constant air monitors was 4.4% for the week ending September 18, 1948 as compared to 15.7% for the previous week. The percentage wind data loss was 7.1%. The individual data losses on the air monitors were 0.0% on 706-A, 7.7% on 115-B, and 5.3% on 735-B.

B. Air Contamination Instances

In five instances the air activity rose above 10% of the tolerance value of 8.5×10^{-11} $\mu c/cc$ for I^{131}. The air activity instances for this week shows an increase in the number of instances but very little increase in either the intensity or the duration of period.

C. Meteorological Data

Number of Inversions	7
Inches of Rainfall	0.00
Prevailing Wind Direction	East - 46.2%
Average Wind Velocity	3.7 m.p.h.

Wind direction frequency percentages and average directional velocities are tabulated on the following page.

[redacted]

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David R Hamrin 5/11/95
Technical Information Officer, ORNL Site — Date

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Technical Information Officer, ORNL Site — Date

Direction	Frequency	Velocity
North	0.0%	---
Northeast	0.0%	---
East	46.2%	4.3 m.p.h.
Southeast	10.2%	4.5 m.p.h.
South	13.5%	2.0 m.p.h.
Southwest	19.9%	4.0 m.p.h.
West	10.2%	2.2 m.p.h.
Northwest	0.0%	---

II. Liquid Waste Disposal Monitoring and Research

A. General

The reconnaissance of Clinch River and Watts Bar Reservoir is underway with three days being spent in sampling this week. Samples of water, mud, plankton, and algae were collected.

Ten constant air monitor shelters and seven additional constant air monitors have been ordered. These monitors are to be placed in and around the X-10 Area.

B. Routine Monitoring Results

Immersion gamma counts of 4 daily samples each of Dam and Settling Basin Water indicate an activity reduction factor of 32.5 compared to 27.3 as indicated by the results of the gross beta analysis of the same number of samples on the same days.

Attached is a tabulation of the gamma radiation values together with the approximate amounts of radiation which would be received from beta emitters in the effluents on the same days surveyed. These values represent radiation intensities on the basis of immersion in infinite volume assuming an average gamma ray energy of 0.7 Mev. and an average beta ray energy of 0.3 Mev. All values are calculated according to the method set forth in CH-2565, "Operating Equations and Procedures Involved in Water Counting at Site X", by K. Z. Morgan.

Discharge activity averages and pertinent data are tabulated below:

	Week Ending Sept. 18	Week Ending Sept. 11	Week Ending Sept. 4
Settling Basin	2.322 mr/hr	0.709 mr/hr	0.369 mr/hr
White Oak Dam	0.085 mr/hr	0.021 mr/hr	0.017 mr/hr
Rainfall	0.00 inches	1.35 inches	0.20 inches
Curies Discharged	18.61 total	19.09 total	21.05 total

W D Cottrell

W. D. Cottrell
Waste Monitoring

WDC:os

[redacted]

Date	Settling Basin — ♯ mrep/hr* 206 - 11 A.M. Analyses	Settling Basin — ♯ mrep/hr* Waste Mon. Analyses	Settling Basin — δ mr/hr** Aver. Small and Large	White Oak Dam — ♯ mrep/hr* Waste Mon. Analyses	White Oak Dam — δ mr/hr** Aver. Small and Large
9-13-48	1.780	1.968	0.798	0.075	0.023
9-14-48	3.015	3.236	0.973	0.078	0.027
9-15-48	1.830	2.276	0.626	0.089	0.013
9-16-48	1.622	1.806	0.695	0.098	0.030
Average	2.062	2.322	0.748	0.085	0.023

* mrep/hr = 2.8×10^{-3} N (N = c/m/ml)

** mr/hr = 6.2×10^{-4} S/3 (S = c/m small cylinder)

** mr/hr = 4.1×10^{-4} L/3 (L = c/m large cylinder)

[redacted]

CLASSIFICATION CANCELLED
DATE 12-23-54
For The Atomic Energy Commission
Chief, Declassification Branch

[redacted]

1. J. C. Hart
2. F. H. J. Burnett
3. K. Z. Morgan
4. F. Western
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12. R. G. Lawler
13. C. Files
14. C. Files
15. R. Files

OAK RIDGE NATIONAL LABORATORY
CENTRAL FILES NUMBER
48-10-90

October 1, 1948

WASTE MONITORING WEEKLY REPORT FOR WEEK ENDING SEPTEMBER 25, 1948

I. Air Activity Monitoring and Study

A. General

The percentage data loss on the three outdoor constant air monitors was 0.6% for the week ending September 25, 1948 as compared to 4.4% for the previous week. The percentage wind data loss was 8.3%. The individual data losses on the air monitors were 0.0% on 706-A, 1.2% on 115-B, and 0.6% on 735-B.

B. Air Contamination Instances

In four instances the air activity rose above 10% of the tolerance value of 8.5×10^{-11} µc/cc for I^{131}. All of these instances occurred at times which would give a possible exposure to a minimum number of personnel.

C. Meteorological Data

Number of Inversions	2
Inches of Rainfall	0.05
Prevailing Wind Direction	East - 46.1%
Average Wind Velocity	6.3 m.p.h.

Wind direction frequency percentages and average directional velocities are tabulated on the following page.

[redacted]

This document has been approved for release to the public by:

David Hamm 5/16/95
Technical Information Officer ORNL Site — Date

Direction	Frequency	Velocity
North	0.0%	---
Northeast	0.6%	3.0 m.p.h.
East	46.1%	8.5 m.p.h.
Southeast	11.7%	4.6 m.p.h.
South	0.7%	2.0 m.p.h.
Southwest	24.7%	4.4 m.p.h.
West	16.2%	4.0 m.p.h.
Northwest	0.0%	---

II. Liquid Waste Disposal Monitoring and Research

A. General

The activity of the Settling Basin has decreased from 2.32 mrep/hr last week to 1.45 mrep/hr for this week. This high reading for last week was caused by algae escaping into White Oak Creek and being collected in sampling. This condition has been alleviated temporarily by sinking the algae with a fire hose.

B. Routine Monitoring Results

Immersion gamma counts of 5 daily samples each of Dam and Settling Basin Water indicate an activity reduction factor of 17.3 compared to 14.7 as indicated by the results of the gross beta analysis of the same number of samples on the same days.

Attached is a tabulation of the gamma radiation values together with the approximate amounts of radiation which would be received from beta emitters in the effluents on the same days surveyed. These values represent radiation intensities on the basis of immersion in infinite volume assuming an average gamma ray energy of 0.7 Mev. and an average beta ray energy of 0.3 Mev. All values are calculated according to the method set forth in CH-2565, "Operating Equations and Procedures Involved in Water Counting at Site X", by K. Z. Morgan.

Discharge activity averages and pertinent data are tabulated below:

	Week Ending Sept. 25	Week Ending Sept. 18	Week Ending Sept. 11
Settling Basin	0.437 mr/hr	0.748 mr/hr	0.709 mr/hr
White Oak Dam	0.025 mr/hr	0.023 mr/hr	0.021 mr/hr
Rainfall	0.05 inches	0.00 inches	1.35 inches
Curies Discharged	19.21 total	18.61 total	19.09 total

W. D. Cottrell
W. D. Cottrell
Waste Monitoring

WDC:os

[redacted]

Date	Settling Basin: β mrep/hr* 206 - 11 A.M. Analyses	Settling Basin: β mrep/hr* Waste Mon. Analyses	Settling Basin: γ mr/hr** Aver. Small and Large	White Oak Dam: β mrep/hr* Waste Mon. Analyses	White Oak Dam: γ mr/hr** Aver. Small and Large
9-20-48	1.146	1.192	0.341	0.092	0.026
9-21-48	1.156	1.512	0.436	0.104	0.025
9-22-48	1.373	1.742	0.503	0.089	0.023
9-23-48	1.212	1.387	0.457	0.115	0.021
9-24-48	1.079	1.440	0.452	0.095	0.030
Average	1.193	1.455	0.437	0.099	0.025

* mrep/hr = 2.8×10^{-3} N (N = c/m/ml)

** mr/hr = 6.2×10^{-4} S/3 (S = c/m small cylinder)

** mr/hr = 4.1×10^{-4} L/3 (L = c/m large cylinder)

[redacted]